

WHAT IS CLAIMED IS:

1. An interpolation synchronous detection method in a radio communication system in which a pilot symbol whose phase point is known is periodically inserted in an information signal to allow interpolation synchronous detection on a receiving side,

wherein synchronous detection of the information between the pilot symbols is performed by linearly interpolating a transfer function estimated from the pilot symbols respectively located before and after the information signal, and a reception sampling point timing used for the synchronous detection is updated at a middle point between the pilot symbols respectively located before and after the information signal.

2. An interpolation synchronous detection method in a radio communication system in which a pilot symbol whose phase point is known is periodically inserted in an information signal to allow interpolation synchronous detection on a receiving side,

wherein when a transfer function of a transmission/reception circuit used in said radio communication system is changed stepwise, the transfer function of said transmission/reception circuit is changed at a middle point between the pilot symbols respectively located before and after the information signal.

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3. A method according to claim 2, wherein the transfer function is changed stepwise by switching a gain range of a transmission/reception section used in said radio communication system.

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4. ^{symbols} A radio communication system in which pilot systems whose phase points are known are periodically inserted in two ends of an information signal having predetermined bits to allow interpolation synchronous detection on a receiving side, comprising:

interpolation means for performing synchronous detection of the information signal between the pilot symbols by linearly interpolating a transfer function estimated from the pilot symbols respectively located before and after the information signal on the receiving side;

means for performing interpolation synchronous detection by using a complex conjugate of the linearly interpolated transfer function; and

processing means for selecting a sampling point, at a middle point between the pilot symbols, at which an eye pattern opens most from a result obtained by discretely oversampling the reception signal, thereby demodulating the reception signal.

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5. ^{symbols} A radio communication system in which pilot systems whose phase points are known are periodically

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inserted in two ends of an information signal having predetermined bits to allow interpolation synchronous detection on a receiving side, comprising:

a transfer function changing section for changing a transfer function of a transmission/reception section in said radio communication system stepwise; and

a transfer function control section for changing a transfer function of said transfer function changing section at a middle point between the pilot symbols.

6. A system according to claim 5, wherein said transfer function changing section comprises a gain changing section capable of switching a variable gain range, and said transfer function control section comprises a gain control section.

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